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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/974,656	10/09/2001	Hyun-Woo Lee	678-748 (P9928)	9955

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EXAMINER	
NGO, NGUYEN HOANG	
ART UNIT	**PAPER NUMBER**
2663	

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/974,656	LEE ET AL.	
	Examiner	Art Unit	
	Nguyen Ngo	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 October 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-8 and 15-37* is/are allowed.

6)☒ Claim(s) *9 and 10* is/are rejected.

7)☒ Claim(s) *11-14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 6/14/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

On page 6 of the specification, there is a typo, the "a second TFCI **bitsrepresenting** a transport" on line 16 should be - a second TFCI **bits representing** a transport-.

On page 6 of the specification, there is a typo, the "established to **transmitcontrol** data for the first channel" on line 26 should be - established to **transmit control** data for the first channel -.

Appropriate correction is required.

Claim Objections

2. Claims 9, 15, 21, and 33 is objected to because of the following informalities:

As for claim 9: The "second TFCI **bitrepresenting** a transport" in line 20 should be - second TFCI **bit representing** a transport -.

The Examiner believes that there might be a typographical error.

As for claim 15: The "a **secondTFCI** symbols" in lines 7 should be – a **second TFCI** symbols-.

The Examiner believes that there might be a typographical error.

As for claim 21: The "channel established to **transmitcontrol** data" in lines 19 should be – channel established to **transmit control** data -.

The Examiner believes that there might be a typographical error.

As for claim 33: The "encoded TFCI **symbolsso** as" in line 30 should be - encoded TFCI **symbols so** as-.

The Examiner believes that there might be a typographical error.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.
> [07-34-01]

4. Claim 1 recites the limitation "the first channel" in line 6. There is insufficient antecedent basis for this limitation in the claim.

5. Claim 7 recites the limitation "the first channel" in line 27. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 15 recites the limitation "the second channel" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claim 9 is rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al. (US 6882636), hereinafter referred to as Kim.

Regarding claim 9, Kim discloses an apparatus for encoding a TFCI in a CDMA mobile communication system (an apparatus for encoding TFCI bits in a CDMA mobile communication system, abstract). Kim further discloses from figure 2;

multipliers 221, 241, and 242 multiply TFCI codewords (TFCI code symbols) received from corresponding TFCI encoders by gain coefficients (col1 lines 56-59) and that the basic TFCI represents 1 to 64 different information including the data rates of

the corresponding channels (a first encoder for encoding a first TFCI bits representing a transport format combination of the first channel to generate first coded symbols and a second encoder for encoding a second TFCI bit representing a transport format combination of the second channel to generate second encoded symbols, col3 lines 2-5). Kim further discloses of the TFCI encoders that outputs symbols by puncturing two symbols of 32 coded symbols as generated from the TFCI encoder (puncturing the first encoded symbols according to a predetermined first puncturing positions and puncturing the second encoded symbols according to a predetermined second puncturing positions, col30 lines 60-64).

that a summer 216 (a multiplexer for multiplexing the output symbols of the first and second encoders to transmit the symbols on the second channel, adds the outputs of the first summer 215 (output symbol of first encoder) and the phase shifter 224 (output symbol of second encoder, col2 lines19-21).

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. Claims 9 and 10 are rejected under 35 U.S.C. 102(a) as being anticipated by applicants disclosure of figure 1 (US Application 09/974656). Applicant has admitted on page 2 of the disclosure and figure 1 of the drawings to be accepted prior art.

Regarding claim 9 and 10, applicant has further indicated Figure 1 of the drawings to be Prior Art and further states on page 2 of the disclosure that a bi-orthogonal encoder 100 (first encoder) encodes a TFCI field#1 for the DCH (fist channel) into 15 coded symbols, and provides the 15 coded symbols to a multiplexer 110. At the same time, a bi-orthogonal encoder 105 (second encoder) encodes a TFCI field#2 for the DSCH (second channel) into 15 coded symbols, and provides the 15 coded symbols to the multiplexer 110 (multiplexer for multiplexing the output symbols). That a multiplexer 120 time-multiplexes the symbols output from the multiplexer 110, and provides its output to a spreader (page 2 lines 24-33). Applicant further discloses that in a logical split method, the TFCI field#1 and the TFCI field#2 are encoded into one TFCI with a punctured Reed-Muller code (puncturing the first and second encoded symbols according to a predetermined puncturing positions, page 2 lines 16-23).

Allowable Subject Matter

11. Claims 1-8 and 15-37 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

12. Claims 1 is are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose **encoding TFCI bits depending on information bits of the first channel and information bits of a second channel established to transmit the packet data over first channel, and transmitting the encoded TFCI bits over the second channel and a first and**

second TFCI bit generator for creating first and second TFCI bits depending on information bits of the first and second channel and puncturing the encoded first TFCI bits and second TFCI bits according to puncturing positions. It is noted that the closest prior art, Kim et al. (US 6882636) discloses an apparatus for encoding/decoding a TFCI in a CDMA mobile communication system. However, Kim et al. fails to disclose or render obvious to the above underline limitations as claimed.

13. Claims 7 is are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose **encoding TFCI bits depending on information bits of the first channel and information bits of a second channel established to transmit the packet data over first channel, and transmitting the encoded TFCI bits over the second channel and a TFCI bit generator for creating the TFCI bits, the number of which is variable depending on an information bit ratio of the first channel to the second channel and a puncturer for puncturing a codeword output from the adder according to the code length information.** It is noted that the closest prior art, Kim et al. (US 6882636) discloses an apparatus for encoding/decoding a TFCI in a CDMA mobile communication system. However, Kim et al. fails to disclose or render obvious to the above underline limitations as claimed.

14. Claims 15 is are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose **encoding TFCI bits for**

the first channel into first TFCI symbols and TFCI bits for the second channel established to transmit control information for the first channel into second TFCI symbols, and transmitting the first and second TFCI symbols over the second channel, and a decoder for inserting zeros in the first TFCI symbols and the second TFCI symbols at first and second predetermined positions respectively, and decoding the zero-inserted first and second TFCI symbols by using inverse fast Hadamard transform (IFHT). It is noted that the closest prior art, Kim et al. (US 6882636) discloses an apparatus for encoding/decoding a TFCI in a CDMA mobile communication system. However, Kim et al. fails to disclose or render obvious to the above underline limitations as claimed.

15. Claims 21 is are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose **transmitting packet data over a first channel, first and second encoded TFCI bits over a second channel established to transmit control data for the first channel and encoding a first TFCI bits representing a transport format combination of the first channel to generate first encoded symbols and a second TFCI bits representing a transport format combination of the second channel to generate second encoded symbols respectively and puncturing the first encoded symbols and the second encoded symbols.** It is noted that the closest prior art, Kim et al. (US 6882636) discloses a method for encoding/decoding a TFCI in a CDMA mobile communication system.

However, Kim et al. fails to disclose or render obvious to the above underline limitations as claimed.

16. Claims 27 is are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose **transmitting packet data over a first channel, first and second encoded TFI bits over a second channel established to transmit control data for the first channel and inserting zeros in the first encoded TFCI bits and second encoded TFCI bits at first and second predetermined positions respectively and decoding the zero-inserted first and second TFCI bits.** It is noted that the closest prior art, Kim et al. (US 6882636) discloses a method for encoding/decoding a TFCI in a CDMA mobile communication system. However, Kim et al. fails to disclose or render obvious to the above underline limitations as claimed.

17. Claims 33 is are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose **encoding TFCI bits for a first channel and TFCI bits for a second channel depending on an information bits ratio of the first channel to the second channel first channel TFCI and the second channel TFCI and creating m first TFCI bits based on data of the first channel and n second TFCI bits based on data of the second channel and encoding the TFCI bits and puncturing the encoded symbols according to puncturing positions (first and second respectively).** It is noted that the closest

prior art, Kim et al. (US 6882636) discloses a method for encoding/decoding a TFCI in a CDMA mobile communication system. However, Kim et al. fails to disclose or render obvious to the above underline limitations as claimed.

18. Claims 11-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

19. These claims are allowable due to the further limitations of the puncturing positions.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Abe et al. (U.S 6693889), Transmission and Reception System, Transmission and Reception Device, and Method of Transmission and Reception.

b) Eroz et al. (U.S 2002/0166093), Sets of Rate-Compatible Universal Turbo Codes Nearly Optimized Over Various Rates And Interleaver Sizes.

c) Smallcomb (U.S2001/0034872), Digital Broadcasting System And Method.

d) Tong et al. (U.S 6744744), Rate Matching and Channel Interleaving For A Communications System.

e) Dilliger et al. (U.S 2002/0131392), Method and Device For Channel Encoding In An Information Transfer System.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen Ngo whose telephone number is (571) 272-8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

N.N.

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9/27/05